SECTION 5. CATEGORY II OPERATIONS

581. GENERAL.

A. This section contains concepts, direction, and guidance to be used by inspectors for evaluating and approving or denying requests for authorization to conduct CAT II all-weather terminal area (AWTA) operations. This includes all CAT II AWTA operations at airports and runways new to an operator even though previously-approved aircraft, airborne equipment, ground-based equipment, concepts and procedures are being used in these operations. This section contains an amplification of the general concepts, policies, direction, and guidance given in previous sections of this chapter. Specific standards are provided for evaluating CAT II AWTA operations with airborne and ground-based equipment which have well-understood operational characteristics and limitations. When an operator requests approval to conduct CAT II AWTA operations using equipment, concepts, or procedures not addressed by these standards, a request for policy, guidance, and direction must be forwarded through the Regional Flight Standards Division (RFSD) to AFS-400.

B. CAT II AWTA operations are defined, for the purpose of this handbook, as all approach and landing operations conducted in IFR weather conditions in accordance with an instrument approach procedure using CAT II operating minimums. CAT II operating minimums are those minimums which specify a decision height (DH) lower than the equivalent of 200 feet (60 meters) above the touchdown zone but not lower than 100 feet (30 meters) above this elevation and a controlling runway visual range (RVR) below RVR 1800 (below RVR 1600 for helicopters) but not less than RVR 1200. All IFR, AWTA operations with operating minimums less than DH 100 (or no DH) and/or a controlling RVR below RVR 1200 are CAT III operations.

(1) Types of CAT II Operations. The only types of CAT II operations which can be currently authorized (1991) for use by U.S. operators are ILS-based operations. MLS-based CAT II operations, however, can probably be conducted in the near future provided the operation is restricted to an “ILS-like” operation which has at least a 4 nm or 5 nm straight-in final approach segment. The flight control laws (computational logic) used in most existing flight directors and autopilots require that a final approach segment be at least this long to perform their intended functions in CAT II operations. Most existing flight control guidance systems will have to be modified and recertificated before CAT II, MLS operations with a short final approach segment can be conducted. This action is necessary for CAT II operations with segmented and/or curvilinear approach paths which result in straight-in final approach segments that are significantly less than 5 nm. Usually this action will include equipment modifications, type design approval, an extensive engineering analysis, and a flight test program. Certain new aircraft, however, will probably be configured with the necessary equipment and certificated for segmented approach paths, and curvilinear approach paths with very short “straight-in” final approach courses, or both.

(2) *Objective of CAT II Operations.* The essential difference between CAT II and CAT I operations is that a CAT II operation places a greater reliance on the guidance provided by the airborne and ground-based equipment. This equipment must be capable of delivering the aircraft to a position from which the flightcrew can accomplish a transition from instrument to visual flight at a height above touchdown (HAT) of 100 feet and complete the landing in the reduced (CAT II) seeing-conditions. The primary objective of CAT II operations is to provide a level of safety equivalent to CAT I precision instrument approach operations even though the seeing-conditions in CAT II operations can be much worse than those encountered in CAT I operations. This objective (the equivalent level of safety) is achieved by the following:

- Enhanced reliability and precision in the airborne and ground-based equipment to increase the precision of flightpath control
- Enhanced flightcrew training and qualifications to increase the precision of flightpath control
- Additional visual aids to enhance seeing-conditions
- Additional criteria to ensure obstacle and terrain clearance
- Additional criteria to ensure ILS/MLS signal protection
- Special operational procedures
- Special ATC procedures, limitations, or both

- Instrument approach procedures which ensure a safe and orderly transition from the en route phase of flight to a point on final approach at a HAT of 100 feet from which a visual landing can be made, or a missed approach can be safely executed with a transition through the missed approach segment back to the en route environment

- Instrument approach procedures, operational flight procedures, and ATC procedures which ensure protection from obstacles near the landing surface (either fixed or mobile) and which also permit safe go-arounds from any point in the approach and landing before touchdown

583. CAT II OPERATIONAL CONCEPTS. The weather conditions in a CAT II operation restrict seeing-conditions so that the external visual references necessary to manually control the aircraft are not acquired until the aircraft reaches a very low altitude (typically 150 to 200 feet AGL). Therefore, the flightcrew must operate and control the aircraft by referring to instruments throughout most of the approach and to a combination of instrument and external visual information during the final stages of the approach, flare (deceleration for helicopters), and landing. Because of the reduced maneuvering capability resulting from CAT II seeing-conditions, the precision of the flight guidance system and the overall precision of flightpath control must ensure that the aircraft can be flown to a position which is closely aligned with the runway centerline, and the desired glidepath. The increased reliability and precision required of the airborne and ground-based equipment is necessary to ensure that when the aircraft arrives at DH, it is on a flightpath which permits the pilot to complete the landing without any significant runway alignment maneuvers. All CAT II operations are conducted in accordance with the DH and RVR concepts used in CAT I operations. Because of the limited seeing-conditions available in CAT II weather conditions, however, the additional requirements outlined under the objective of CAT II operations (see previous paragraph) are necessary to assure that an adequate level of safety is maintained when an aircraft is being operated in these conditions.

A. *Function of Visual Reference.* Because of the limitations in the airborne equipment used in CAT II operations and the available instrument guidance, the pilot must have sufficient visual references to manually control and maneuver the aircraft from the DH to a full stop on the runway. These external visual references are required below DH for the pilot to control and maneuver the aircraft, align the aircraft with the runway centerline, touchdown within the touchdown zone, and then rollout on the runway.

B. *Decision Region.* The “decision region” is that portion of the approach between 300 feet AGL and DH where the tracking performance must be critically evaluated to determine whether the overall system performance is sufficient for the aircraft to continue to DH. As previously discussed, the visual scene normally expands as the aircraft descends because of geometric and slant range effects. The pilot must integrate the instrument information with the visual cues, as they become available, and decide before passing DH to either continue the approach by visual reference or to execute a go-around. This information must be integrated and evaluated in the “decision region” and the pilot must make a definitive decision before the aircraft passes DH. While in the “decision region,” the flightcrew should be especially aware of the maximum permissible excursions of the raw, ILS indications (deviations) from which a landing can be safely completed. The tracking performance parameters normally used within the “decision region” are + 1/3 dot localizer displacement (maximum) and + 1/2 dot glideslope displacement (maximum) with no sustained oscillations about the localizer or glidescope. If the tracking performance is outside of these parameters while within the “decision region,” a go-around should be executed because the overall tracking performance is not sufficient to ensure that the aircraft will arrive at the DH on a flightpath which permits the landing to be safely completed.

C. *CAT II DH.* The DH is the lowest height to which the approach can be conducted by instrument reference alone. The DH is the minimum height at which the flightcrew must decide to either continue a CAT II approach by visual reference or to go-around. It is not the point at which the evaluation and decision process is begun. The evaluation and decision process must continue after passing the CAT II DH to assure that sufficient visual references are maintained to manually control and maneuver the aircraft and to assure that the aircraft remains aligned with the runway centerline and will safely touchdown within the touchdown zone. The flightcrew must immediately execute a missed approach if the required visual references are not maintained or when the pilot cannot determine that a safe landing will be accomplished.

D. *Purpose of CAT II Operating Minimums.* CAT II operating procedures and minimums have been established to ensure that the desired level of safety is achieved when CAT II seeing-conditions exist. These operating minimums are based on the DH and RVR concepts (see section 3,

paragraphs 489 and 495). The established operating minimums (DH and RVR) determine the minimum safe heights for instrument flight and the minimum RVR at which the landing can safely be completed by external visual reference in a particular aircraft. These operating minimums are based on established CAT II operational concepts and on the required CAT II airborne equipment, ground-based visual and electronic equipment, operating procedures, and pilot training and qualification. These operating minimums, when combined with other CAT II requirements, ensure that the combination of information available from external visual sources and the aircraft instruments and equipment is sufficient to enable properly qualified pilots to safely operate the aircraft along the desired flightpath. As the quality and quantity of external visual information decreases due to reduced seeing-conditions (when operating minimums are reduced), the quality and quantity of the instrument information and the proficiency of the flightcrew must be increased to maintain the desired level of safety.

E. *Establishing Operating Minimums.* The operating minimums (DH and RVR) for CAT II operations are usually determined by the tasks the pilot will be required to perform to complete the landing after passing the DH. When establishing operating minimums, consideration is given to the degree of precision in flightpath control provided by the required electronic equipment, and the enhanced seeing-conditions provided by the required visual aids. Generally, the minimum required seeing condition (RVR) is higher-than-standard (for example, RVR 1600) when the pilot is required to establish visual reference at a higher altitude (for example, HAT 150) because of obstacles or limitations in the ground-based guidance. The RVR minimum is also higher if the pilot has to establish better seeing-conditions because of the complexity or difficultly of piloting tasks required to safely complete the landing (for example, factors related to the design or handling characteristics of a particular aircraft). Two basic sets of operating minimums are established for CAT II operations. These are DH 150/RVR 1600 and DH 100/RVR 1200. Most runways which support CAT II operations permit the use of DH 100/RVR 1200 operating minimums. Operating minimums at some runways, however, are restricted to DH 150/ RVR 1600 because of limitations in the ground equipment (such as a single RVR reporting system), limitations imposed by the prethreshold terrain (radar altimeter not authorized) and/or obstacle clearance limitations in the final approach surface, the approach light surface, the touchdown area, and the missed approach area. The CAT II operating minimums are established in accordance with the criteria in AC 120-29 (as amended), this handbook, and U.S. TERPS.

585. STANDARD CAT II OPERATIONS. Standard CAT II operating minimums (DH 100/RVR 1200) are based on the "building block" approach. The building block approach is based on CAT I operations, including standard CAT I requirements, and includes the special aeronautical knowledge, experience, skill, training, and qualifications as well as the special airborne and ground-based equipment specified in AC 120-29. The assumptions and criteria used in aircraft certification and CAT II instrument approach procedure design must be compatible with the operational concepts in this handbook. These assumptions and criteria ensure that flightcrews and aircraft which meet the requirements of this handbook and AC 120-29 can be used to safely conduct CAT II operations using standard CAT II minimums. Any special equipment or procedures necessary for the safe conduct of CAT II operations must be specified in the airworthiness certification basis of the aircraft (type certificate or supplemental type certificate) and in the FAA-approved aircraft flight manual. Any aircraft which cannot be safely operated to standard CAT II operating minimums using flightcrews that meet the minimum requirements of this handbook and AC 120-29 shall not be certificated or otherwise approved for CAT II operations. The operations specifications (OpSpecs) establish the lowest operating minimums which can be used in any CAT II operation, even if the established instrument approach procedure specifies minimums lower than those values. Special airborne equipment, special ground-based equipment and special flightcrew training required for CAT II operations are specified in this handbook, AC 120-29, and the FAA-approved aircraft flight manual.

A. *Standard CAT II Operating Minimums.* The standard CAT II operating minimums for all aircraft are DH 100 and RVR 1200. The DH must be based on the use of either the inner marker or radio (radar) altimetry. Usually the CAT II DH is based on the use of radio (radar) altimetry. Barometric altimetry is not an acceptable means of establishing the DH for CAT II operations using the standard CAT II minimums (DH 100).

B. *Higher-Than-Standard CAT II Operating Minimums.* The higher-than-standard CAT II minimums for all aircraft are DH 150 and RVR 1600. These minimums are usually applied as interim minimums (restricted to higher-than-standard CAT II minimums) for the first 6 months of operation with an aircraft new to an operator. The first 6 months are used to validate the effectiveness of the

operator's maintenance program to support use of the standard CAT II minimums (see paragraph 7A for special credit for fail-passive/fail-operational flight control systems). These minimums are also applied when there are transmissometer limitations (only one installed), obstacle clearance requirements, or prethreshold terrain limitations (radio (radar) altimeter not authorized) which preclude the use of standard CAT II minimums. DH 150 and RVR 1600 are also the lowest minimums which can be approved when the DH is based on barometric altimetry.

C. *Operational Approval Basis.* Standard CAT II operations are approved for an operator by the issuance of OpSpecs which authorize the conduct of CAT II instrument approach procedures at specified airports. The basis for this approval depends on the operating rules applicable to the operation (Part 121 or Part 135), the complexity of aircraft (turbine-powered, reciprocating, or helicopter), the passenger capacity of the aircraft, and/or the size of the aircraft (large or small).

(1) *Part 121 Operations.* All CAT II operations conducted under Part 121 are approved in accordance with this handbook and AC 120-29. The CAT II provisions of Part 61 and Part 91 do not apply to these operations.

(2) *Part 135 Airplane Operations.* CAT II airplane operations conducted under Part 135 are approved in accordance with flight standards policy, which is illustrated in the following cases.

(a) *Case 1.* This case involves the operational approval basis for all turbine-powered airplanes, all airplanes certificated with 10 or more passenger seats, and all large airplanes (over 12,500 lbs.). All Case 1 airplanes operated under Part 135 are approved in accordance with this handbook and AC 120-29. The CAT II provisions of Part 61 and Part 91 do not apply to these operations.

(b) *Case 2.* This case involves the operational approval basis for all airplanes operated under Part 135 which are not included in Case 1. All Case 2 airplanes are approved in accordance with this handbook and the provisions of Appendix A to Part 91. CAT II provisions of Part 61 do not apply to these operations.

(3) *Part 135 Helicopter Operations.* All CAT II operations conducted under Part 135 using helicopters are approved in accordance with this handbook and AC 135-(TBD). The CAT II provisions of Part 61 and Part 91 do not apply to Part 135, CAT II helicopter operations.

D. *CAT II Flight Guidance and Control Systems.* Standard CAT II operations are based on the use of special airborne and ground-based equipment which have capability, reliability, and redundancy superior to the equipment required for CAT I operations (see AC 120-29). Although CAT II airborne equipment provides increased capability, reliability, and redundance, the flight control guidance systems used in these operations are not necessarily capable of automatically detecting all potential failures which could significantly disturb the aircraft's flightpath (for example "single-channel" flight control systems). If such failures occur, the flightcrew must be able to quickly detect the failure and to intervene manually to continue safely to the approach and landing or execute a missed approach (see paragraph 587 that follows for special credit for the use of "fail-passive" or "fail-operational" flight control systems). In other words, standard CAT II operations are based on the use of single-channel flight directors, or single-channel autopilots, or combinations of both. Even though some CAT II operations are based on dual-independent flight directors, each of these systems is usually a single-channel system which is not capable of detecting all potential failures. Therefore, even with dual-independent flight directors, the flightcrew must be able to detect failures and manually intervene in certain cases. Standard CAT II operations are also based on the use of: Type II (redundant) ILS ground equipment; dual ILS airborne equipment; radio altimeters (to identify DH); instrument failure detection and warning systems; special missed approach guidance equipment; and rain removal equipment.

E. *Airworthiness of CAT II Airborne Equipment.* Throughout the history of CAT II operations, two processes have existed for showing that the airborne equipment of the aircraft is airworthy for CAT II operations. One process is the type design approval process in which approval is obtained during aircraft certification testing. The other is the operational demonstration and approval process in which approval is obtained after the operator demonstrates satisfactory airworthiness of the equipment in actual flight operations. Currently, the most prevalent process is the type design approval process in which approval is contained in the FAA-approved aircraft flight manual. Aircraft which have CAT II type design approval are not required to undergo an operational airworthiness demonstration. For aircraft which do not have CAT II type design approval, however, an operational demonstration of CAT II airworthiness in accordance with AC 120-29 is required. Generally, this operational demonstration program

includes a requirement that the operator conduct at least 300 approaches to 100 feet in CAT I weather conditions using the proposed CAT II system. AFS-400 concurrence is required before any operational demonstration and approval program may be initiated.

F. *Validation of CAT II Maintenance Program.* The airborne system reliability required for the conduct of CAT II operations is achieved by special design requirements and special maintenance programs. The special maintenance programs necessary for CAT II operations are extensive and expensive and are usually the largest factor affecting an operator's decision of whether or not to conduct these operations. When an operator requests authorization to conduct operations with aircraft equipped with standard CAT II equipment, and that aircraft is new to CAT II operations with the operator, all CAT II operations with those aircraft shall be initially restricted (for at least 6 months) to higher-than-standard operating minimums (DH 150 and RVR 1600). This restriction must remain in place until the operator has successfully validated its maintenance program in accordance with AC 120-29. If an aircraft has type design approval for CAT III operations, it may be possible for the operator to be initially authorized for standard CAT II minimums (DH 100 and RVR 1200) with those aircraft if certain equipment restrictions are specified in the operator's OpSpecs.

G. *Airports and Runways.* All CAT II operations are restricted to airports and runways which meet the special safety requirements necessary for CAT II operations. Within the U.S., all approved CAT II airport and runway operations are conducted in accordance with approved CAT II instrument approach procedures published in Part 97. U.S. CAT II operations shall only be conducted in accordance with an approved Part 97, CAT II instrument approach procedure. In foreign countries, CAT II operations conducted by U.S. operators are restricted to those runways approved in accordance with Order 8260.31. Even though a particular runway is approved for CAT II operations, an operator cannot be authorized to conduct CAT II operations at that location until all requirements of this handbook are met and that particular CAT II operation is authorized in the operator's OpSpecs.

H. *Higher Headquarter's Review and Concurrence.* All initial CAT II approvals for each type of aircraft operated by an operator require review and concurrence by the RFSD and AFS-400 before OpSpecs may be issued for that operation. Unless specified otherwise in AFS-400's review and concurrence, subsequent reductions in CAT II operating minimums for each aircraft type require RFSD concurrence before the revised OpSpecs authorizing the lower minimums can be issued to the operator.

587. SPECIAL CAT II OPERATIONS. Special CAT II operations are those operations which require special airborne or ground-based equipment, and/or procedures. Special CAT II operations include operations which are granted operational credit for the use of special airborne equipment capabilities, such as automatic landing. Special CAT II operations also include those operations which require special ground-based equipment and special procedures to conduct CAT II operations which could not be safely conducted with conventional aircraft using standard airborne equipment and procedures (for example, steep-angle, CAT II, MLS approaches).

A. *Operational Credit for CAT III Equipment.* The installation of CAT III airborne equipment in newly-manufactured large aircraft is becoming common. As a result, in certain cases an operator can obtain operational credit in CAT II operations when these more capable systems are used. Airborne equipment which is type design-approved for CAT III operations has special design features which increase the safety of operations in CAT II seeing-conditions. For example, the flightpath of the aircraft is not normally disturbed when failures occur in the flight guidance and control system. This is because the increased redundancy, reliability, and integrity built into the CAT III systems causes the system either to disconnect "passively" or to remain fully operational for the landing. Even though operating minimums in CAT II operations cannot be reduced below DH 100 and RVR 1200 because of other limitations, operational credit for the use of CAT III airborne systems may be granted to an operator by the authorization of operating minimums of DH 100 and RVR 1200 for initial CAT II operations (first 6 months) with these aircraft. In this case certain restrictions must be specified in the operator's OpSpecs. This operational credit eliminates the requirement to conduct the initial operations using DH 150 and RVR 1600 and permits the operator to use standard CAT II minimums (DH 100 and RVR 1200) at least 6 months earlier than usual.

(1) In standard CAT II operations, the objective of the requirement for an operator to validate the CAT II maintenance program for at least 6 months with minimums restricted to DH 150 and RVR 1600 is to ensure that the required level of airborne equipment reliability is achieved. This is to ensure that frequent malfunctions will not occur in standard CAT II operations (DH 100 and RVR 1200). The design features of CAT III airborne equipment significantly reduce the potential for failures which could

adversely affect standard CAT II operations. As a result, validation of the CAT II maintenance program before conducting operations to DH 100/RVR 1200 is not necessary if these operations are conducted under a restriction that requires the airborne equipment to operate to CAT III standards (for example, fail-passive or fail-operational automatic landing). This permits the operator to conduct operations with standard CAT II minimums during the 6-month period used to validate its maintenance program. When the operator has successfully validated its maintenance program, the restriction which requires the airborne equipment to be operated to CAT III standards can be removed by amending the operator's OpSpecs to authorize the use of DH 100/RVR 1200 minimums with standard CAT II equipment (for example, "single-channel" autopilot, or manually-flown operations).

(2) If the operator requests operational credit for the use of CAT III systems to conduct standard CAT II operations, the operator's OpSpecs which authorize the conduct of these operations must include a limitation which specifies that all CAT II operations using DH 100 and RVR 1200 as operating minimums must be conducted with the airborne equipment operating to CAT III standards. This limitation should read "fail-passive autoland only" or "fail-passive/fail-operational autoland only," as appropriate, for aircraft equipped with CAT III automatic landing systems or "fail-passive HUD only" for aircraft equipped with CAT III, heads-up display systems. These restrictions must remain in the operator's OpSpecs until the CAT II maintenance program for that aircraft is successfully validated.

B. *Operations Requiring Special Airborne Capabilities.* Certain aircraft with unique handling characteristics or unique design features may be required to have special airborne capabilities to permit CAT II operations to be safely conducted. These special airborne capabilities are used to enhance handling characteristics during manual flight (stability augmentation systems), to enhance flightpath control during flare and touchdown (automatic landing systems), and to enhance flightpath control during automatic flight (auto-deceleration and hover systems). Stability augmentation systems are frequently necessary in helicopters to enhance low-speed handling characteristics in CAT II seeing-conditions. Auto-deceleration and hover systems may be used in the future for certain helicopters. Currently (1991), the B-747 is the only airplane which must have autoland capability to conduct standard CAT II operations (DH 100 and RVR 1200). All CAT II operations with the B-747 using operating minimums below DH 150/RVR 1600 must be predicated on the use of the automatic landing system. Either manually-flown or autocoupled CAT II operations can be conducted with the B-747 using higher-than-standard operating minimums (DH 150/RVR 1600).

589. CAT II TERMINAL INSTRUMENT APPROACH PROCEDURES (U.S. AIRPORTS). All CAT II operations conducted in the U.S. must be conducted in accordance with an approved Part 97, CAT II Instrument Approach Procedure. CAT II instrument approach procedures in the U.S. are established in accordance with the criteria in U.S. TERPS and AC 120-29.

A. Paragraphs C59 and H108 of the OpSpecs are used to specify the CAT II instrument approach procedures, airports and runways, CAT II approach and landing minimums, and the aircraft that a particular operator is authorized to use in CAT II operations. These paragraphs also specify the CAT II airborne equipment, RVR equipment, pilot qualifications, missed approach requirements, and the operating limitations which apply to that operator's CAT II operations. If the flightcrew is properly trained and qualified, and the aircraft is properly equipped and maintained, an operator can be authorized to conduct CAT II operations to airports and runways where the CAT II instrument approach procedure is prescribed by any of the following:

- OpSpecs (paragraphs C59 or H108, as applicable)
- Part 97
- U.S. military for military airports
- Prescribed or approved by the government of an ICAO contracting state, provided that the procedure is authorized for CAT II operations by U.S. operators in accordance with Order 8260.31 and listed by AFS-400 as approved for CAT II/III operations

B. The criteria in AC 120-29 and this handbook establish the lowest approach and landing minimums which can be authorized for CAT II operations. The CAT II approach and landing minimums authorized for a particular operator are specified in paragraphs C59 and H108 of the OpSpecs. Inspectors shall not authorize an operator to use approach and landing minimums lower than these values. Additionally, inspectors shall not authorize CAT II approach and landing minimums at foreign airports unless the provisions of this handbook and Order 8260.31 are met.

591. FOREIGN CAT II INSTRUMENT APPROACH PROCEDURES.

A. *Degree of Equivalence.* The CAT II ground-based systems and approach procedures at foreign airports may not be exactly in accordance with U.S. standards. As a result, it is critical that the information and functions necessary for CAT II operations (as provided by the ground-based systems and approval procedures at the foreign airports) are consistent with the intent of U.S. CAT II standards. Foreign airports and runways which have been determined to be equivalent to U.S. CAT II standards are identified by FAA-approved lists in accordance with Order 8260.31. Operators desiring CAT II approvals at foreign airports which are not on these lists should submit a request for approval through the POI and the RFSD to AFS-400. The major factor considered by AFS-400 and the "controlling region" when approving foreign airports and runways for CAT II operations by U.S. operators is the degree of equivalence with U.S. CAT II standards. When determining whether a foreign CAT II operation is sufficiently equivalent to U.S. standards to permit approval for use by U.S. operators, AFS-400 and the controlling region evaluate the following for the degree of equivalence:

- High-intensity approach lights
- High-intensity runway edge lights
- Touchdown zone and centerline lights
- Runway markings
- Quality and integrity of the approach and landing ground-based guidance systems
- RVR reporting capabilities and procedures
- ILS/MLS critical area protection
- Obstacle clearance protection in the approach and missed approach, including the obstacle-free zone
- Airport surface traffic control
- Terminal area air traffic control

B. *Authorizing Foreign Airports/Runways.* The standard OpSpecs, AC 120-29, this handbook, and Order 8260.31 establish the conditions which must be met for all CAT II operations at foreign airports and runways. These documents contain the policies, criteria, procedures, and general requirements that must be used to authorize, restrict, or deny the use of foreign, CAT II instrument approach procedures. This includes all foreign CAT II instrument approach procedures developed by the following types of foreign countries:

- CAO contracting states (ICAO members)
- Non-ICAO countries (non-ICAO members)
- Countries in which the FAA has developed the CAT II instrument approach procedure for the foreign country

593. FOREIGN FLAG CAT II OPERATIONS IN THE U.S. The airborne equipment, pilot training, and pilot qualification standards required for CAT II operations by foreign authorities and foreign operators may not be in exact accordance with U.S. standards. For safety reasons, however, it is essential that foreign flag operators conduct CAT II operations in the U.S. in a manner which is consistent with the intent of U.S. CAT II standards. The foreign flag operator's aviation authority (State of the operator) has prime responsibility for determining that the operator complies with the special requirements that the foreign aviation authority has specified for CAT II operations at any airport, including U.S. airports. The State of the operator also has prime responsibility for authorizing and restricting operating minimums for any operation by the foreign flag operator. Therefore, the inspector's prime responsibility related to foreign flag CAT II operations is to ensure that they are conducted in the U.S. in a manner consistent with the intent of U.S. standards and procedures.

A. *General Policies.* When evaluating a request by a foreign flag operator to conduct CAT II operations within the U.S., inspectors shall apply the following policies associated with the unique nature of these operations and with the responsibilities of the State of the operator:

(1) A foreign flag operator will not be authorized to conduct CAT II operations in the U.S. unless that operator is authorized by its foreign aviation authority to conduct CAT II operations.

(2) Foreign flag operators will not be authorized to use CAT II operating minimums in the U.S. that are lower than the CAT II operating minimums authorized by the foreign aviation authority for CAT II operations.

(3) Foreign flag operators will not be authorized to use CAT II operating minimums in the U.S. that are lower

than the lowest minimums authorized for a comparably equipped U.S. operator.

(4) All CAT II operations conducted by foreign flag operators in the U.S. must be conducted in accordance with a Part 97, CAT II instrument approach procedure.

(5) The foreign flag operator must provide documentation to the FAA which confirms that its foreign aviation authority has determined that the CAT II program to be used is equivalent to the program required in AC 120-29.

(6) The foreign aviation authority must confirm that the foreign flag operator is authorized to conduct CAT II operations with a particular aircraft type, and that its flight operations and maintenance programs are equivalent to U.S. CAT II standards. Usually this confirmation satisfies the inspector's responsibility for determining whether the operator's aircraft are properly equipped and maintained and whether the operator's flightcrews are properly trained and qualified for CAT II operations.

B. *Foreign Flag CAT II Approach and Landing Minimums.* The criteria in AC 120-29 and this handbook establish the lowest approach and landing minimums which can be authorized, under any circumstances, for foreign flag CAT II operations in the U.S. The CAT II operating minimums authorized for a particular foreign flag operator are specified in the OpSpecs in a manner similar to minimums specified for U.S. operators. Inspectors shall not, however, authorize a foreign flag operator to use CAT II operating minimums lower than the values authorized by the foreign aviation authority. The airborne equipment required by AC 120-29 and any additional equipment required by the foreign aviation authority for CAT II operations must also be specified in the OpSpecs.

(1) *Standard CAT II Operating Minimums.* If a foreign flag operator has at least 6 months of satisfactory experience conducting CAT II operations with a particular aircraft type, that operator can be authorized to use standard CAT II minimums (DH 100/RVR 1200) in the U.S. with that aircraft. This requirement can be met with 6 months of satisfactory experience with that aircraft type in CAT II operations in any country, without obtaining any of the CAT II experience in the U.S.

(2) *Higher-Than-Standard CAT II Operating Minimums.* If a foreign flag operator does not have at least 6 months of satisfactory experience (in any country) in conducting CAT II operations with a particular aircraft type, that operator shall be restricted to higher-than-standard CAT II operating minimums (DH 150/RVR 1600) until it completes a 6-month demonstration program. Because of the high degree of international standardization for CAT II facilities, the data collected during this demonstration program can be obtained at foreign airports as well as U.S. facilities. Following the completion of this demonstration program, the foreign flag operator does not need to submit demonstration data to the FAA. Instead, the foreign flag operator must present confirmation from the foreign aviation authority that the demonstration was acceptable and the operator is authorized to use standard CAT II operating minimums (DH 100/RVR 1200) at U.S. airports.

595. CAT II EVALUATION AND APPROVAL PROCESS. The approval process for CAT II, AWTA operations is generally the same as the general process for approval or acceptance described in volume 1, chapter 4, section 6 of this handbook. The approval process for CAT II operations closely parallels the process used to approve CAT I operations. This paragraph outlines specific criteria related to the evaluation and approval of CAT II operations.

A. *General Criteria.* Before authorizing an operator to conduct CAT II operations, inspectors must evaluate the operator's proposed operations and determine that the operator is competent to safely conduct these operations. Inspectors must also determine that the operator has specified the conditions necessary for the safe conduct of the proposed operations and that those conditions ensure that the following criteria are met:

- Operations are restricted to those aircraft which are properly equipped and airworthy for the CAT II operations being conducted
- Compliance with regulatory requirements for the operations
- Compliance with the requirements of Part C of the standard OpSpecs
- Compliance with the requirements of this handbook
- Compliance with the CAT II criteria of AC 120-29 or Part 91, Appendix A (as applicable)
- Accepted, safe operating practices are provided

- The use of the concepts of stabilized approach and decision region in all CAT II operations is required
- CAT II operations are restricted to those pilots who are properly trained, experienced, qualified, and proficient for CAT II operations
- CAT II operations are restricted to those airports and runways which meet CAT II requirements
- CAT II operations are authorized and/or restricted at foreign airports and runways in accordance with Order 8460.31

B. *Airport, Runway, and Ground-Based Equipment Requirements.* The suitability of the airport and runway for the type of aircraft and the operation being conducted is an integral part of an inspector's evaluation and approval of CAT II operations. The basic requirements for standard CAT I operations and the performance requirements in the applicable operating rules address the majority of the criteria required for CAT II operations. In the operating concepts and criteria for CAT II operations, however, it is required that certain other factors be considered. Inspectors must ensure that the operator fully understands CAT II operational requirements and that the company manuals and training programs provide the policy, guidance, training, and procedures necessary to ensure that these other factors are adequately addressed. When evaluating an operator's overall CAT II operations program, inspectors must consider whether the program accounts for the following factors when designating airports to support CAT II operations:

- Suitability of the runways, runway field lengths, taxiways, and other maneuvering areas on the airport, considering the restricted seeing-conditions associated with CAT II operations
- CAT II instrument approach procedures and NAVAID's to be used
- Procedures for CAT II protection of the runway safety areas, obstacle-free zones, and ILS/MLS critical areas, as well as runway and taxiway incursion prevention procedures in CAT II weather conditions
- ATC facilities and services required for CAT II operations
- Required safety facilities and services (such as crash, fire, and rescue) and any special procedures needed for the CAT II operations
- RVR reporting and weather reporting and forecasting services
- Aeronautical information services related to these operations (such as NOTAM's and ATIS)
- Adequacy of lighting, marking, and other visual aids necessary to support CAT II operations
- Necessity for prohibiting CAT II operations at airports and runways which are not approved for CAT II operations (not authorized by Part 97 or Order 8460.31)

596. - 610. RESERVED.

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